

Amphibia, Anura, Hylidae, *Dendropsophus melanargyreus* (Cope, 1887): Distribution extension, new state record and geographic distribution map

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ABSTRACT: We present the first record of *Dendropsophus melanargyreus* for the state of São Paulo and a distribution map for this species. This new record represents the southeastern limit of distribution, which is 106 Km from the nearest locality previously recorded for this species and is the fourth new register of anuran to northwestern region of São Paulo in the last two years, increasing species list of the region from 33 to 36 species. This results evidence the importance of this region as priority area for inventory.

Dendropsophus melanargyreus (Cope, 1887) (Figure 1) is a hylid frog included in the *D. marmoratus* group (*sensu* Gomes and Peixoto 1996; Faivovich *et al.* 2005). According to these authors there are eight species in this group, and they are diagnosed by the warty skin around the margin of the lower lip, the crenulated margin of limbs, large vocal sacs, and the dorsal marbled pattern (Cochran 1955; Bokermann 1964). The *D. marmoratus* group is widespread in the South America occurring in Amazon, Atlantic Rain Forest, and Savannah formations, and the species can habit forested and open areas, reproducing as in permanent as in temporary ponds (Azevedo-Ramos *et al.* 2004a, b; Carvalho-e-Silva and Bertoluci 2004; Garcia and Silvano 2004; Peixoto and Pimenta 2004; Peixoto and Bastos 2004; Silvano *et al.* 2004; Silvano and Peixoto 2004). *Dendropsophus melanargyreus* is characterized

by dorsum brownish to dark yellow with dark brown blotches, limbs with transversal dark bands, hidden part of the thighs dark brown, males with vocal sac usually blackish, presence of small fringes on the external part of the members, and venter cream with dark edges (Cope 1887; Uetanabaro *et al.* 2008). According to Frost (2009) and Silvano *et al.* (2004) this species occurs in interior basins of Goiás and Mato Grosso to northeastern Brazil, Surinam and French Guiana; have been reported in the Departamento de Santa Cruz in Bolivia and the Pantanal of northeastern Paraguay (Alto Paraguay province). Herein, we present the first record of *D. melanargyreus* for the state of São Paulo, Brazil.

Two calling males were heard and collected in the municipality of Magda (20°33'08" S, 50°12'42" W), state of São Paulo, by F. R. Silva and V. H. M. Prado in 28 January

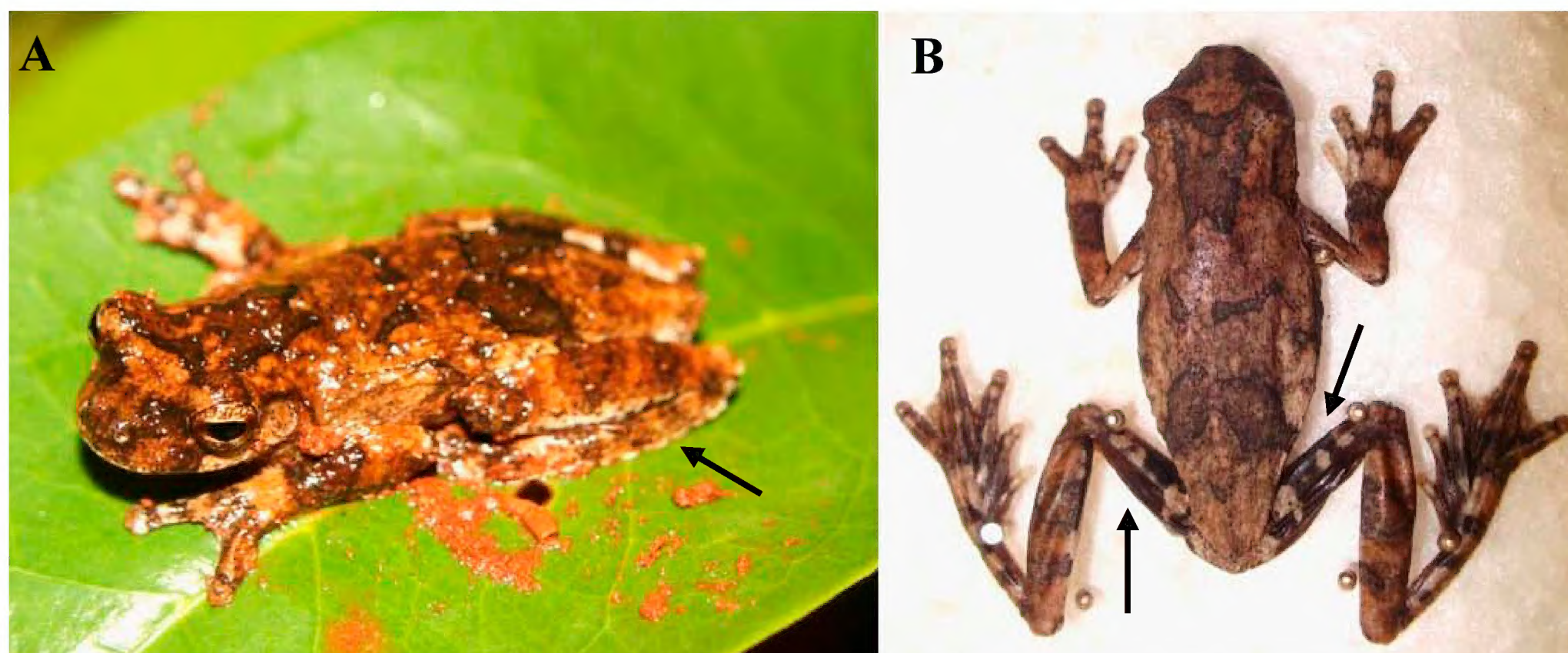


FIGURE 1. *Dendropsophus melanargyreus* from municipality of Magda, state of São Paulo. (A) Color in life: dorsum brownish to dark yellow with dark brown blotches, and the arrow shows the presence of small fringes on the external part of the members (Photo by Diogo Borges Provete); (B) fixed specimen (DZSJRP 11755; snout-vent length = 35.0 mm), the arrows show limbs with transversal dark bands and hidden part of the thighs dark brown (Photo by Vitor H. M. do Prado).

2009 (license number 18163-1/IBAMA). The specimens were found perching on shrubs on the bank of temporary pond in a pasture area, ca. 148 m far from a Mesophytic Semideciduous Forest fragment (*sensu* Kronka *et al.* 1993). The pond has 256.4 m² of total area, 50 cm of maximum depth, and 10 % of plant cover (Poaceae). The specimens were identified according to the diagnosis presented by Cope (1887), Caramaschi and Jim (1983) and Uetanabaro *et al.* (2008), and deposited in the Coleção do Departamento de Zoologia e Botânica (DZSJRP-11754-11755) housed at UNESP, São José do Rio Preto, São Paulo, Brazil.

This record now represents the southeastern limit of the distribution of *D. melanargyreus* (Figure 2), which is ca. 106 km from the nearest locality previously recorded for this species (Aparecida do Taboado, in the state of Mato Grosso do Sul, Brazil, 20°05'28" S, 51°06'09" W), according to Proyecto BOLFOP (1995), Cacciali and Scott (2004), Gottsberger and Gruber (2004), Coleção do Departamento de Zoologia e Botânica (DZSJRP-AMPHIBIA), Coleção Célio F. B. Haddad (CFBH) and Coleção de Anfíbios do Museu de Zoologia da UNICAMP (ZUEC-AMP), which data are available on http://splink.cria.org.br/centralized_search?criaLANG=pt, Coleção Herpetológica da Universidade de Brasília (CHUNB), Museu Nacional do Rio de Janeiro (MNRJ), Coleção da Universidade Federal do Mato Grosso (UFMT) and Coleção da Universidade

de Uberlândia (UFU), which data were provided by the curators of the collections, and Museu de Zoologia da Universidade de São Paulo (MZUSP), which data were obtained looking at the register book.

The record of *D. melanargyreus* is the fourth new register of amphibian species to northwestern region of São Paulo in the last two years (see Prado *et al.* 2008; Silva *et al.* 2009; Prado, V. H. M. unpublished data). According to Duellman (1999) and Santos *et al.* (2009) the anuran composition in the Mesophytic Semideciduous Forest is similar to those anuran assemblages recorded for Cerrado biome. Therefore, finding such species in this region of São Paulo state should be expected. This result confirms the prediction of Duellman (1999) and Santos *et al.* (2009) and also the indication in the “Diretrizes para conservação e restauração da Biodiversidade no Estado de São Paulo” (Rodrigues *et al.* 2008) that the northwestern region of the state is a priority area for inventory, as it represents a gap of knowledge for different taxonomic groups. Although anurans were well sampled in this region, the development of the project “Fauna e flora de fragmentos florestais remanescentes no noroeste paulista: base para estudos de conservação da biodiversidade” (BIOTA/FAPESP-Proc. 04/04820-3) in areas not yet sampled contributed to the increasing of the species list of the region from 33 (Candeira, C.P. unpublished data) to 36 species.

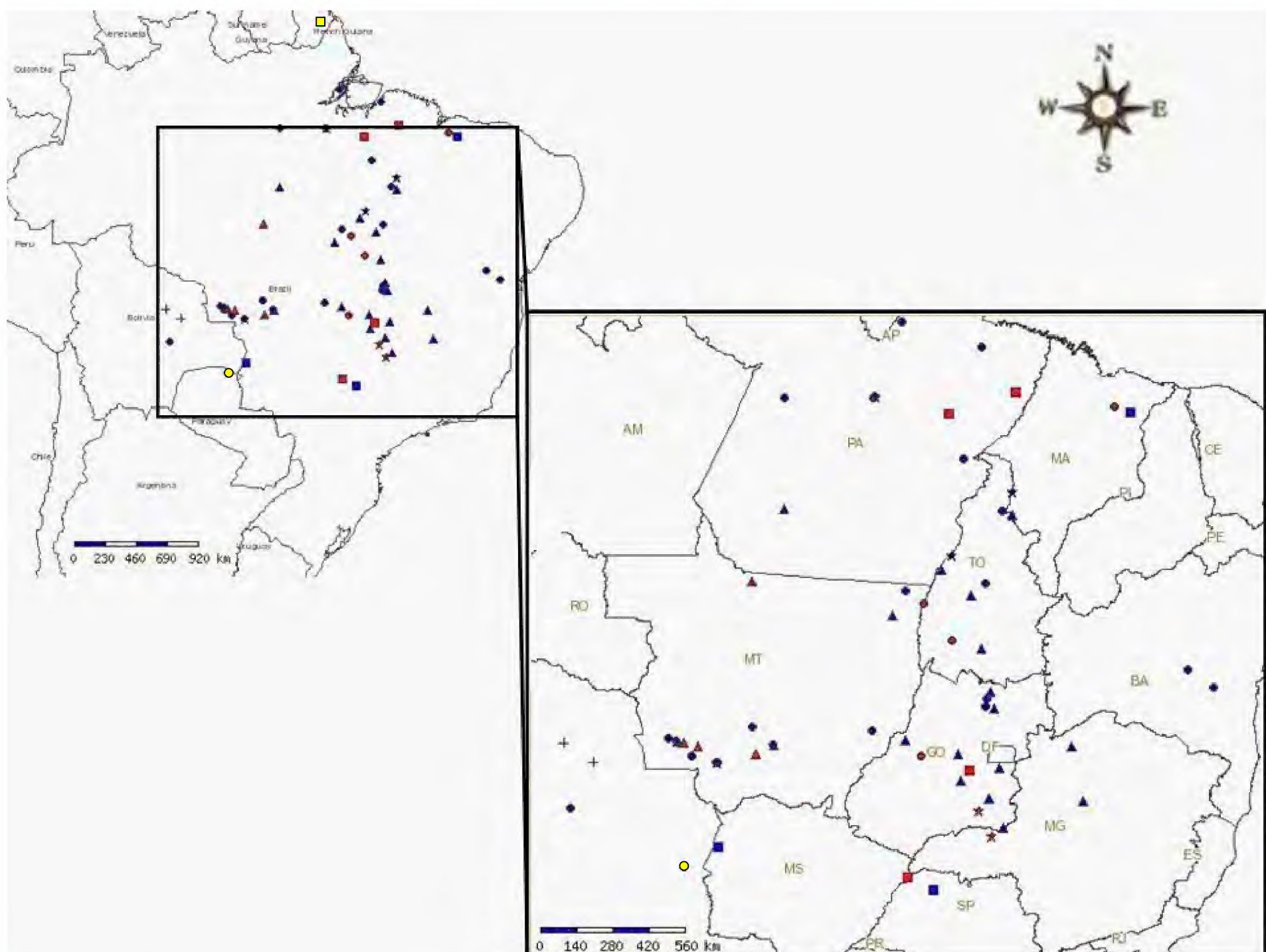


FIGURE 2. Geographic distribution map of *Dendropsophus melanargyreus*: according to Coleção Herpetológica da Universidade de Brasília (blue triangle), Coleção da Universidade Federal do Mato Grosso (red triangle), Museu de Zoologia da Universidade de São Paulo (blue circle), Coleção de Anfíbios do Museu de Zoologia da Universidade de Campinas (red circle), Coleção de Anfíbios do Departamento de Zoologia e Botânica de São José do Rio Preto (blue square, including the new record for state of São Paulo), Museu Nacional do Rio de Janeiro (red square), Coleção Célio F. B. Haddad (blue star), Coleção da Universidade Federal de Uberlândia (red star), Proyecto BOLFOP (1995, blue cross), Cacciali and Scott (2004, yellow circle) and Gottsberger and Gruber (2004, yellow square).

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LITERATURE CITED

- Azevedo-Ramos, C., A. Angulo, K.H. Jungfer, S. Reichle, I. De la Riva and J. Icochea. 2004a. *Dendropsophus acreanus*. In IUCN 2008. *2008 IUCN Red List of Threatened Species*. <http://www.iucnredlist.org>. Captured on 13 April 2009.
- Azevedo-Ramos, C., E. La Marca, L.A. Coloma and S. Ron. 2004b. *Dendropsophus marmoratus*. In IUCN 2008. *2008 IUCN Red List of Threatened Species*. <http://www.iucnredlist.org>. Captured on 13 April 2009.
- Bokermann, W.C.A. 1964. Notes on treefrogs of the *Hyla marmorata* group with description of a new species (Amphibia, Hylidae). *Senckenbergiana Biologica* 45: 243-254.
- Cacciali, S.P. and N.J. Scott. 2004. Nuevo registro de *Hyla melanargyreus* Cope, 1887 (Anura, Hylidae) para Paraguay. *Cuadernos de Herpetología* 18(1): 73-74.
- Caramaschi, U. and J. Jim. 1983. Uma nova espécie de *Hyla* do grupo *marmorata* do nordeste brasileiro (Amphibia, Anura, Hylidae). *Revista Brasileira de Biologia* 43(2): 195-198.
- Carvalho-e-Silva, S.P. and J. Bertoluci. 2004. *Dendropsophus seniculus*. In IUCN 2008. *2008 IUCN Red List of Threatened Species*. <http://www.iucnredlist.org>. Captured on 13 April 2009.
- Cochran, D.M. 1955. Frogs of southeastern Brazil. *U.S. Natural Museum Bulletin* 206: 1-423.
- Cope, E.D. 1887. Synopsis of the Batrachia and Reptilia obtained by H. H. Smith in the Province of Mato Grosso, Brazil. *Proceedings of the American Philosophical Society* 24: 44-60.
- Duellman, W.E. 1999. Distribution patterns of amphibians in the South America; p. 255–327 In W.E. Duellman (ed.). *Patterns of distribution of amphibians – a global perspective*. 1st ed. Baltimore: Johns Hopkins University Press.
- Faivovich, J., C.F.B. Haddad, P.C.A. Garcia, D.R. Frost, J.A. Campbell and W.C. Wheeler. 2005. Systematic review of the frog family Hylidae, with special reference to Hylineae: phylogenetic analysis and taxonomic revision. *Bulletin of the American Museum of Natural History* 294: 1-240.
- Frost, D.R. 2009. *Amphibian Species of the World: an online reference. Version 5.3*. Electronic Database accessible at <http://research.amnh.org/herpetology/amphibia/index.php>. American Museum of Natural History, New York. Captured on 16 March 2009.
- Garcia, P. and D. Silvano. 2004. *Dendropsophus nahdereri*. In IUCN 2008. *2008 IUCN Red List of Threatened Species*. <http://www.iucnredlist.org>. Captured on 13 April 2009.
- Gomes, M.R. and O.L. Peixoto. 1996. Nova espécie de *Hyla* do grupo *marmorata* de Sergipe nordeste do Brasil (Amphibia, Anura, Hylidae). *Iheringia – Série Zoologia, Brasil* 80: 33-38.
- Gottsberger, B. and E. Gruber. 2004. Temporal partitioning of reproductive activity in a neotropical anuran community. *Journal of Tropical Ecology* 20: 271-280.
- Kronka, F.J.N., C.K. Matsukuma, M.A. Nalon, I.H. Delcali, M. Rossi, I.F.A. Mattos, M.S. Shin-Ike and A.A.S. Pontinhas. 1993. *Inventário florestal do Estado de São Paulo*. São Paulo: Instituto Florestal. 199 p.
- Peixoto, O.L. and B. Pimenta. 2004. *Dendropsophus novaisi*. In IUCN 2008. *2008 IUCN Red List of Threatened Species*. <http://www.iucnredlist.org>. Captured on 13 April 2009.
- Peixoto, O.L. and R. Bastos. 2004. *Dendropsophus soaresi*. In IUCN 2008. *2008 IUCN Red List of Threatened Species*. <http://www.iucnredlist.org>. Captured on 13 April 2009.
- Prado, V.H.M., R. Borges, F.R. Silva, T.T. Tognolo and D.C. Rossa-Feres. 2008. Amphibia, Anura, Hylidae, *Phyllomedusa azurea*: Distribution extension. *Check List* 4(1): 55-56.
- Proyecto BOLFOR. 1995. Fauna herpetological: Inventário de base en la Concesion Oquiriquia. Electronic Database accessible at http://rmportal.net/library/I/A/2/a/documentos-bolfor/documentos-tecnicos/dt23.pdf/view?set_language=pt-br. Captured on 15 September 2009.
- Rodrigues, R.R., C.A. Joly, M.C.W. Brito, A. Paese, J.P. Metzger, L. Cassati, M.A. Nalon, N. Menezes, N.M. Ivanauskas, V. Bolzani and V.L.R. Bononi. 2008. *Diretrizes para conservação e restauração da biodiversidade no Estado de São Paulo*. São Paulo: Governo do Estado de São Paulo. 246 p.
- Santos, T.G., T.S. Vasconcelos, D.C. Rossa-Feres and C.F.B. Haddad. 2009. Anurans of a seasonally dry tropical forest: Morro do Diabo State Park, São Paulo state, Brazil. *Journal of Natural History* 43(15): 973-993.
- Silva, F.R., V.H.M. Prado, T.S. Vasconcelos, T.G. Santos and D.C. Rossa-Feres. 2009. Amphibia, Anura, Microhylidae, *Chiasmocleis albopunctata*: Filling gap and geographic distribution map. *Check List* 5(2):314-316.
- Silvano, D. and O.L. Peixoto. 2004. *Dendropsophus dutrai*. In IUCN 2008. *2008 IUCN Red List of Threatened Species*. <http://www.iucnredlist.org>. Captured on 13 April 2009.
- Silvano, D., C. Azevedo-Ramos, R. Reynolds and M. Hoogmoed. 2004. *Dendropsophus melanargyreus*. In IUCN 2008. *2008 IUCN Red List of Threatened Species*. <http://www.iucnredlist.org>. Captured on 13 April 2009.
- Uetanabaro, M., C.P.A. Prado, D.J. Rodrigues, M. Gordo and Z. Campos. 2008. *Guia de campo dos anuros do Pantanal e planaltos de entorno*. Campo Grande: Editora UFMS. 196 p.

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